

REMARKS

Claims 1-14 remain in the application.

The Rejections:

In the Final Office Action dated August 8, 2007, the Examiner rejected Claims 1-3 and 8 under 35 U.S.C. 102(b) as being anticipated by Hakala et al. U.S. Patent No. 6,367,587.

Referring to Claim 1, the Examiner stated that Hakala discloses an elevator drive machine including multiple electric motors and a traction sheave as claim (see all figures and respective portions of the specification). Hakala further depicts from figure 2, a pair of space apart end plates (frames 3, 3a) each retaining an associated bearing (22); a pair of electric motors having rotor (17, 18) and stator (19, 20); a shaft (not described) but depicted in figure 2 and 3 (see dotted line) having opposed free ends, and being rotatably supported by bearings (22), each free end of the shaft being drivingly connected to an associated one of the motors. Furthermore, Hakala discloses a traction sheave (2) supported by the shaft for rotation by the motors (see figure 2, 5 and 6).

As to Claim 2, the Examiner stated that Hakala depicts in figures 2 and 3, rotors (17, 18) arranged on the associated free end of the shaft and a stator (19, 20) mounted on an associated bearing end plate by a cage housing.

Referring to Claim 3, the Examiner stated that Hakala discloses at least one brake disk not label see figure 4 attached to the traction sheave (2) and at least one disk brake (9) acting on at least one brake disk (see Col. 4, lines 20-22).

As to Claim 8, the Examiner stated that Hakala discloses a secondary sheave (47) attached to the machine frame by a support (46) (see figure 5).

The Examiner rejected Claims 4-7 and 9-14 under 35 U.S.C. 103(a) as being unpatentable over Hakala in view of Albrich et al. U.S. Patent No. 6,429,554.

Referring to Claims 4 and 9, the Examiner stated that Hakala addresses all the similar limitations of claim 1 above, but does not explicitly describes having a drive unit with a plurality of frequency converters connected to the motors and operating in a master/slave mode. However, Albrich discloses an system in which an electric motor is used cableway drives or lift systems in which a plurality of frequency converters are connected to the motor and operating in a master/slave (see claim 1). Additionally, Albrich discloses in figure 1, frequency converters (5a-5f). Since Hakala and Albrich are in the same field of endeavor regarding lift systems, the purpose disclosed by Albrich would have been recognized in the pertinent art of Hakala. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a plurality of frequency converters connected to each motors and operating in a master/slave mode as taught by Albrich within the teaching of Hakala for the purpose/advantages that in the event of failure of one or more stator segments in the motor (i.e. winding short circuit or failures in the associated frequency converter) the electric motor can continue to run generally without additional measures, or in the worst case scenario, the other motor will continue to operate.

As to Claims 5, 10 and 13, the Examiner stated that Albrich depicts from figure 1, a control portion (6a) of the master frequency converter (5a) that obviously specifies a total current distributed among the frequency converters (5b-5f), wherein each of the slave frequency converters (5b-5f) obviously include a current regulator for regulating a current based upon a reference current value and an actual current value detected by the current detection device (9a).

Referring to Claims 6 and 11, the Examiner stated that Albrich depicts from figure 1, a bus system connecting frequency converters (5a-5f) for communicating at least one of reference-current, synchronization signals and identification signals from the main control device (11).

As to Claim 12, the Examiner stated that Albrich discloses resolver line (15), representing an actual rotational speed of a motor shaft by a tachogencrator (not shown) coupled to the shaft and a control portion (6a) generating a signal representing a reference rotational speed (see figure 1 and Col. 3, lines 31-41).

As to Claim 14, the Examiner stated that Hakala discloses a secondary sheave (47) attached to the machine frame by a support (46) (see figure 5).

The Response:

Applicants' Claims 1 and 9 recite "a shaft having opposed free ends, said shaft being rotatably supported by said bearings, each of said free ends of said shaft being drivingly connected to an associated one of said motors". The Hakala drive machine does not have such a shaft.

The Examiner stated that Hakala discloses "a pair of electric motors having rotor (17, 18) and stator (19, 20)". According to the Examiner, Hakala depicts "a shaft (not described) but depicted in figure 2 and 3 (see dotted line) having opposed free ends, and being rotatably supported by bearings (22), each free end of the shaft being drivingly connected to an associated one of the motors." The Examiner also stated that "Hakala discloses a traction sheave (2) supported by the shaft for rotation by the motors (see figure 2, 5 and 6)." As to Claim 2, the Examiner stated that "Hakala depicts in figures 2 and 3, rotors (17, 18) arranged on the associated free end of the shaft and a stator (19, 20) mounted on an associated bearing end plate by a cage housing."

The Examiner failed to identify what portion of the structure shown in the drawings represents Applicants' "shaft". The only "dotted" lines in Hakala Fig. 2 are two dashed lines in the right part of the drawing (depicting section A-A in Fig. 1) that represent hidden edges of the frame block 3. Section 608.02 of the MPEP refers to such lines as "hidden" lines. Hakala Fig. 3 shows two "chain" lines; one horizontal and one vertical. Chain lines are used to as center lines or lines of symmetry. See the attached definitions of dashed lines and chain lines from the *EG1021/2 Drawing Handbook* published by the University of Leicester. Section 608.02 of the MPEP refers to "chain" lines as "projected" lines.

As shown in Figs. 2 and 3, the Hakala traction sheave 2 is mounted on the rotors 17 and 18 which rotors are attached together by fasteners. Each of the rotors 17 and 18 has an outwardly extending hollow center portion on which a pair of bearings 22 is mounted to support the rotors on corresponding frame blocks 3a and 3. The horizontal chain line shown in Fig. 3 simply depicts the axis of rotation of the rotors 17 and 18. There is no shaft drivingly connected to the rotors as is evident from the vertical wall concentric with one of the bearings 22 and closing each of the hollow center portions of the rotors 17 and 18. The only connection between the rotors 17 and 18 is by fasteners that attach the rotors directly to the traction sheave 2 as shown in Fig. 2.

In the Response to Arguments, the Examiner stated that "Hakala et al. clearly shows a pair of motors each having rotors (17, 18) and stators (19, 20), which rotate in a shaft as seen in figures 2 and 3, and being supported by rotors 17, 18, which are part of the pair of motors." This statement does not make sense to Applicants. How do the motors "rotate in a shaft"? Even if the motors "rotate in a shaft", Applicants' claims require "free ends of said shaft being drivingly connected to an associated one of said motors". The Examiner has not identified a corresponding structure in Hakala.

Applicants' Claims 1 and 9 also recite "a traction sheave supported by said shaft for rotation by said motors". Clearly, the Hakala traction sheave 2 is supported by the rotors 17 and 18.

Finally, Hakala describes the disclosed drive machine as not having a drive shaft. Hakala states in Col. 3, Lines 3-10 that:

By placing the traction sheave between two motors, a compact machine structure is achieved, as well as a possibility to transmit the torque, power and forces directly from the machine to the traction sheave without a separate drive shaft. By coupling the rotors of two different electric motors mechanically together with the tractions sheave, these advantages are achieved to a distinct degree.

Thus, the Hakala drive machine does not include or suggest the following elements of Applicants' Claim 1:

a shaft having opposed free ends, said shaft being rotatably supported by said bearings, each of said free ends of said shaft being drivingly connected to an associated one of said motors (Hakala has no shaft); and
a traction sheave supported by said shaft for rotation by said motors (the Hakala traction sheave 2 is supported by the rotors 17, 18).

The above comments also apply to independent Claim 9.

Albrich does not provide the missing elements.

In view of the above arguments, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.